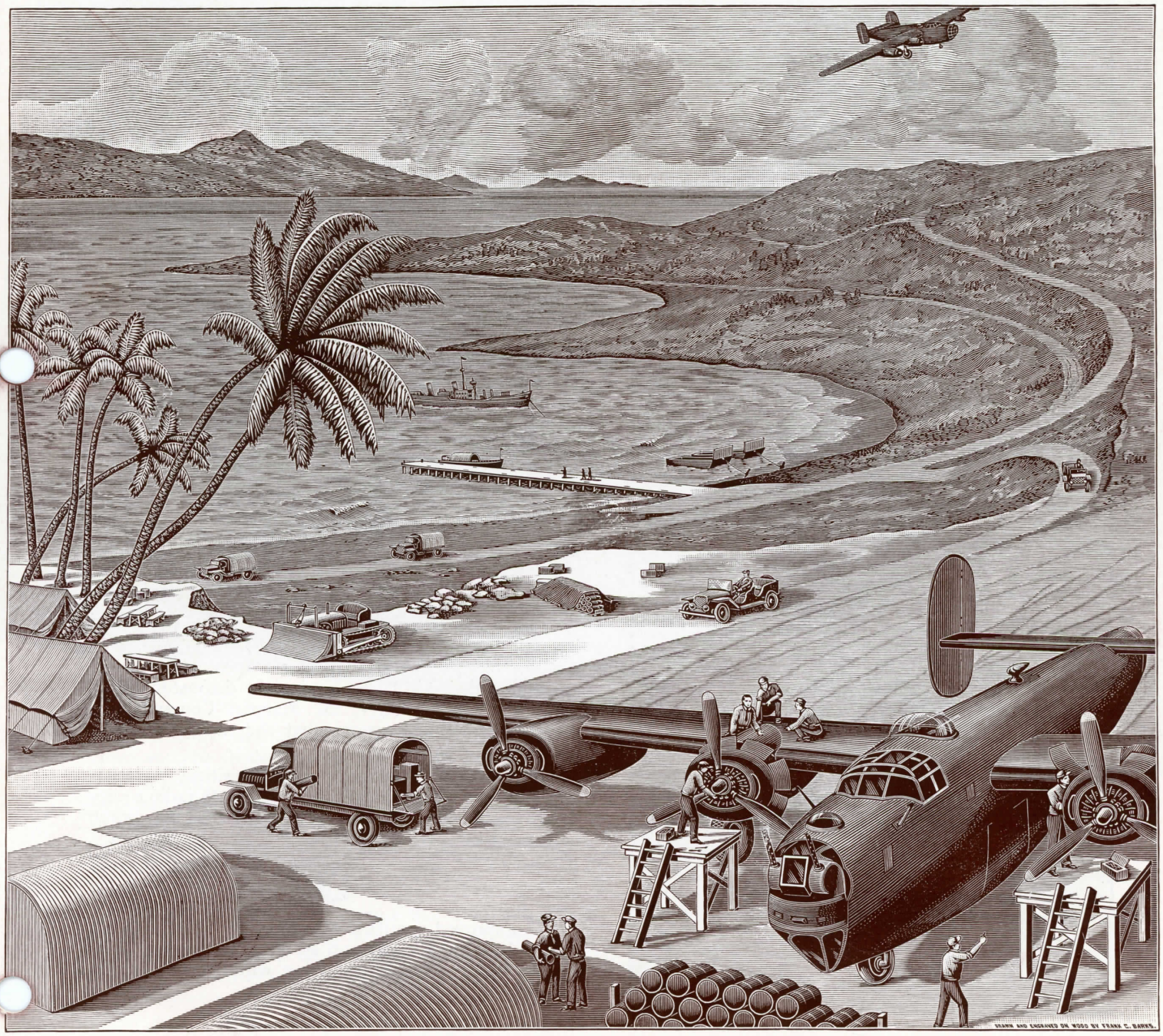
VOLUME 1 — NUMBER 24 DECEMBER 1, 1943

FIELD SERVICE BULLETIN

RESTRICTED

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE ACT, U.S.C. 50:31 AND 32. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO ANY UNAUTHORIZED PERSON IS PROHIBITED BY LAW.



CONSOLIDATED VULTEE AIRCRAFT CORPORATION
San Diego, California, U. S. A.

VOLUME 1 NUMBER 24

FIELD SERVICE BULLETIN

Published Semi-Monthly by
CONSOLIDATED VULTEE AIRCRAFT CORPORATION
General Office, San Diego, Calif., U. S. A.
SERVICE DEPARTMENT

IN THIS ISSUE

PAGE

Engineering Changes 2

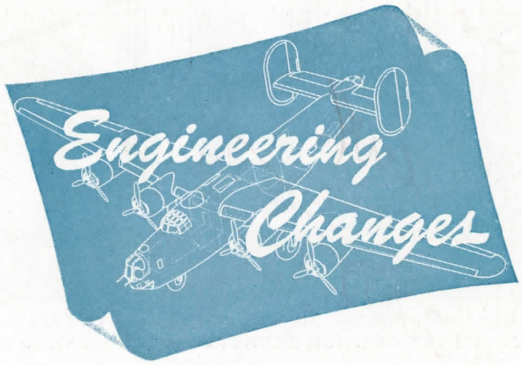
B-24 Fuse Locations 3

New Houde Shimmy Damper Uses Main Hydraulic System Fluid 5

Revised Emergency Procedure for Lowering B-24 Nose Landing Gear 6

PRINTED IN U. S. A.

★ ★ ★



A redesigned engine gauge restrictor (28P5183) has been installed on PBY-5A airplanes starting with Bureau Serial No. 48260. The new fitting is attached to the fuel pressure gauge, one of three instruments in the Edison gauge unit on the instrument panel.

Sleeve (28F1215), which was formerly used to restrict the flow of fluid to the gauge, has been eliminated. Fluid flow is now restricted by a .032 inch hole drilled in the new part.

Threads attaching the tube to the gauge are less liable to be stripped because the simplified restrictor makes possible a more secure connection. (MCR279.)

At the direction of the Materiel Command, the master battery power switch in the battery ground (negative) lead has been scheduled for removal beginning with B-24J airplane Serial No. 42-10036. The switch was provided to permit opening of the battery circuit in the event battery solenoid switches should stick in the closed position.

Removal of the switch followed discovery of two facts:

1. No case of battery solenoid switches sticking had been brought to the attention of the Materiel Command.

2. Operation of the detonator for radio equipment was prevented when the master battery power was open.

Many flight crews regularly were opening the switch on leaving their airplanes, leaving the detonator circuit without a power source, the Materiel Command reported, despite instructions that the switch is to be used only for emergencies.

To eliminate unnecessary use of critical materials and to insure a continuous flow of power to radio equipment, the Materiel Command directed that the switch be removed. (MCR 201.)

For improved ventilation, a door-type ventilator has replaced the duct ventilation system for the flight deck of the B-24J airplane beginning with Serial No. 42-73415. (MCR 304.)

★ ★ ★

B-24 FUSE LOCATIONS

Figure 1.

LIKE other vital installations in the B-24 airplane, fuses and clip mountings require service and care.

A fuse may be likened to a *safety link* in a chain; a link purposely made weaker than those adjoining so that any undue load placed upon the chain as a whole will cause the safety link to be the point of the break. This breakage then prevents damage to equipment which must be guarded for some particular reason.

Obviously it is unwise to replace this weak link with another until the cause of the overloading has been removed. Likewise, a burned fuse should not be replaced until the overload has been removed from the circuit, and then only with another which exactly complies with specifications. Overfusing a circuit is a dangerous practice and can be the cause of disastrous fires. For safety purposes, wiring is designed to carry more than its specified load, but this factor should *not* encourage overloading.

It should be borne in mind that amperage, not voltage, determines the size of the fuse. The fuse is not intended as a protection against excessive voltage, nor against any damage such voltage might cause to the electrical system.

The chart on the next page, together with the isometric drawing above, will serve as reference information on fuse specifications, and for rapid location of fuses and fuse boxes.

(Continued on page 4)

(Continued from page 3)

ELECTRIC FUSE CAPACITY AND LOCATION

NOSE TURRET FUSE BOX	Capacity Amperes
Nose turret power	20
Nose turret flying suit heater	20
Nose turret oxygen indicator	2
BOMBARDIER'S PANEL	
A.F.C.E. (Slo-Blo) (to 42-40652)	20
A.F.C.E. (Slo-Blo) (42-40653 and on)	30
Air temperature	2
Astrograph (omitted 42-72865 and on)	2
Bombardier's exten. & A.F.C. lights (omitted 42-72964 and on)	5
Bombardier's flying suit heater (41-23640 to 42-72965)	20
Bombardier's oxygen indicator (to 42-72965)	2
Bombardier's windshield wiper	20
Bomb fusing	20
Bomb indicating lights	5
Bomb sight (to 41-11938)	20
Camera receptacle	15
Glide bomb attachment	2
Interval control	15
Navigator's exten. light	5
Navigator's flying suit heater (41-23640 and on)	20
Navigator's oxygen indicator	2
Navigator's table light	5
Panel and fluorescent lights	2
Stabilizer (41-23640 and on)	15
HEATER FUSE BOX (Omitted after 42-73514)	
Navigator's heater	15
Bombardier's heater	15
Copilot's fan	5
Copilot's heater	15
Heater solenoid No. 1 Engine (41-24233 to 42-40257)	10
Heater solenoid No. 2 Engine	10
Heater solenoid No. 3 Engine	10
Pilot's fan	5
Pilot's heater	15
Radio operator's heater	15
Top turret heater	15
PILOT'S FUSE BOX	
A-3 Pilot (41-11587 to 41-11756)	20
Automatic Flight Control (41-11757 to 41-11938)	20
Formation running & passing lights	15
L.G. Indicator test light (42-72815 and on)	2
L.G. safety switch solenoid	10
Landing lights	10
Nose and tail alarm bells	10
Pilot's compass lights	2
Pilot's flying suit heater (41-23640 and on)	20
Pilot's selector switch (41-11587 to 41-11756)	5
Propeller governors (4)	10
Recognition lights	10
Top gunner's flying suit heater (42-72814 and on)	20
LANDING GEAR WARNING HORN RELAY BOX (Omitted after 42-72814)	
Landing gear warning horn	5
Top turret flying suit heater	20
COPILOT'S FUSE BOX	
A.C. Power (Slo-Blo) (to 42-40567)	30
A.C. Power (Slo-Blo) (42-40568 and on)	35
Anti-icer pump	10
Autosyn transmitter (4)	2
Carburetor air temperature (4)	2
Copilot's flying suit heater (41-23649 and on)	20
Cowl flaps (4)	15
Fast feathering (4) (to 41-11938)	5
Fluorescent light auxiliary box	10
Fuel boosters (4)	10
Intercooler shutter	20
Oil dilute solenoid	10
Oil temp. No. 1 and 2	2

COPILOT'S FUSE BOX	Capacity Amperes
Oil temp. No. 3 and 4	2
Pitot heater	15
Primers	10
Radio compass light	5
Radio operator's flying suit heater (41-23640 and on)	20
Remote indicating compass	2
Start and mesh switches	20
STATION 3.1 FUSE BOX	
Aux. bomb bay fuel transfer pump	10
Bomb bay oxygen indicator	2
Copilot's oxygen indicator	2
Pilot's oxygen indicator	2
Radio operator's oxygen indicator	2
INVERTER RELAY BOX	
A.C. Power Slo-Blo (2) (42-40568 on)	30
RADIO FUSE & JUNCTION BOX	
SCR-535 Radio (G.F.E.)	20
SCR 535 Radio (G.F.E.)	15
LIAISON JUNCTION BOX	
Antenna reel	15
OR1003 Control Box (41-11587 to 41-11671)	20
Interphone power	10
L.H. POWER BUS (41-23640 and on)	
Left wing power cable	400
Tail turret, L.H.	250
Top turret, L.H.	250
R.H. POWER BUS (41-23640 and on)	
Aux. hydraulic electric motor (bomb bay)	250
Outside battery solenoid switch	400
Right wing power cable	400
Tail turret, R.H.	250
Top turret, R.H.	250
NACELLE JUNCTION BOXES (4)	
Nacelle power to starter and fast feather motors (41-24220 and on)	250
STATION 4.0 FUSE BOX	
Bomb bay lights (to 42-72814)	10
Bomb bay lights & flap position trans. (42-72814 and on)	10
Bomb door indicator lights	15
Deicer motor	15
Flap position transmi ter and warning horn (to 42-72814)	5
Flight deck compartment light (to 41-11938)	5
Fuel gauge light	5
Nose wheel comp. light (to 41-11938)	5
Nose wheel and flight deck light combined (41-23640 and on)	5
BK RELAY PANEL	
Radio Autosyn AC	5
Radio Autosyn DC	10
STATION 5.4 FUSE BOX	
Bomb bay flying suit heater	20
Bottom turret flying suit heater (41-24192 to 42-41112)	20
Bottom turret oxygen indicator (to 42-41169)	2
Camera oxygen indicator	2
Fuel transfer pump	15
Radio compt. ext. light	2
Tail turret flying suit heater (to 41-11938)	20
Tunnel gunner and radio compt. light	5
STATION 6.1 (TUNNEL) FUSE BOX	
Camera flying suit heater (41-23640 and on)	20
Side gun flying suit heater (2)	20
Tail turret ext. light	2
Tail turret flying suit heater (41-11938 and on)	20
TAIL TURRET FUSE BOX	
Side gunner's oxygen ind. (2)	2
Tail turret oxygen ind.	2
Tail turret power	20
WHEEL WELL FUSE BOXES (2)	
Landing light, left (41-11558 and on)	30
Landing light, right (41-11558 and on)	30

★ ★ ★

NEW HOUDE SHIMMY DAMPER USES MAIN HYDRAULIC SYSTEM FLUID

A NEW shimmy damper assembly, designed for use with hydraulic fluid AN-VV-O-366b, is now factory-installed on B-24J airplanes. The change, which became effective with Serial No. 42-100036, makes it possible to use the same type of fluid in the shimmy damper that is used in the main hydraulic system.

The new shimmy damper assembly, Houde A-10660, replaces Houde A-9750, which uses a special castor oil base fluid, Houdaille L-1404.

Houde assembly A-10660 consists of shimmy damper A-10635 plus lever, link, collar, and attaching bolts and nuts. Houde assembly A-9750 consists of shimmy damper A-9749 plus the same items. The only difference in the two assemblies, A-10660 and A-9750, is in the shimmy damper itself (A-10635 and A-9749). All external parts are the same.

In appearance, the two shimmy dampers are identical, but internal changes have been made to allow the use of hydraulic fluid AN-VV-O-366b. These changes were necessary because (1) AN-VV-O-366b fluid has a far lower viscosity than Houdaille fluid L-1404, and (2) mineral oil (AN-VV-O-366b) has a deteriorating effect on rubber parts while castor oil (Houdaille L-1404) does not. Accordingly, the orifice and regulating valve have been changed in size, and packings of a synthetic material have been used. Special synthetic packings between wing shaft and abutment flange, between wing shaft and barrel, between abutment flange and barrel, and between wing shaft and sealing flange have been added to prevent leakage of fluid.

The information given in Volume 1, No. 20 of the Field Service Bulletin for the A-9750 Houde shimmy damper assembly applies to the new assembly, A-10660, except as noted in the previous paragraph, and in the matter of the proper fluid.

Warning: Be sure to service the shimmy damper with fluid according to the instruction plate. Servicing the Houde A-9749 damper with AN-VV-O-366b fluid will render the damper inoperative. Likewise, servicing the new shimmy damper, Houde A-10635, with Houdaille fluid L-1404, will render the damper inoperative. (MCR 214(A)1.)

★ ★ ★

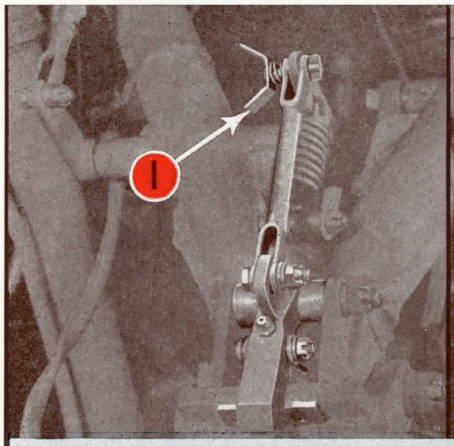
Note: The new Houde shimmy damper is readily identified by its RED instruction plate. Earlier Houde shimmy dampers have black instruction plates.

Figure 2. Earlier model shimmy damper

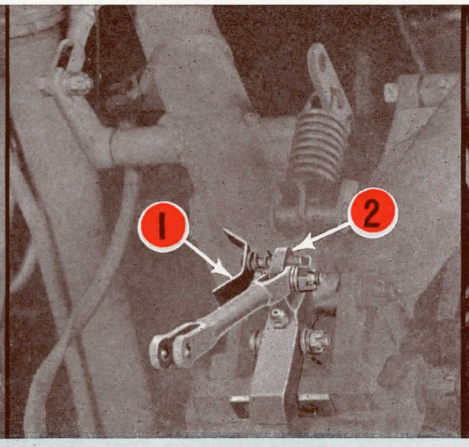
Figure 3. New shimmy damper.

REVISED EMERGENCY LOWERING PROCEDURE FOR B-24 NOSE LANDING GEAR

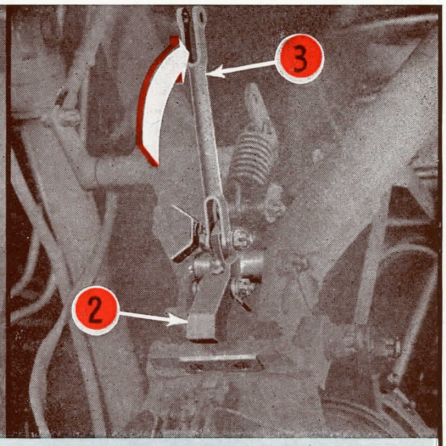
TO RELEASE LATCH:



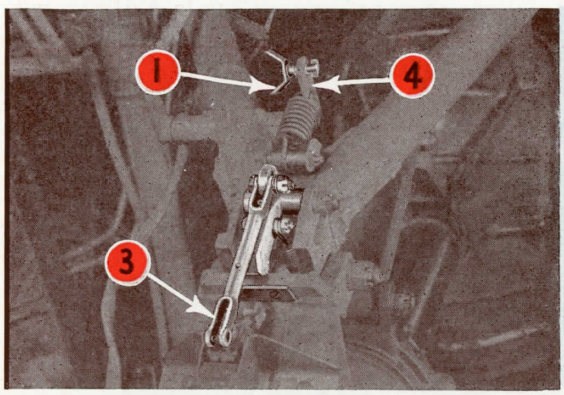
FIRST: Push in release pin (1), turn lock tab, and remove pin



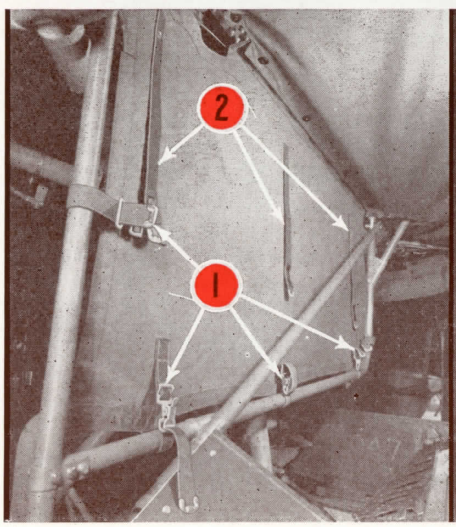
SECOND: Insert pin (1) through slot in latch (2)

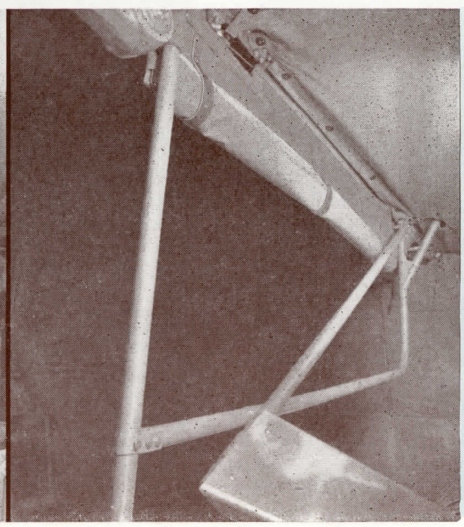


THIRD: Using link (3) as a lever, pry latch (2) open



• After prying the latch open, remove pin (1) from the latch and insert through lever (4), as illustrated. This allows link (3) to hang freely so it will not come in contact with the bottom of the radio floor when the nose gear is lowered, and also prevents possible loss of pin (1).





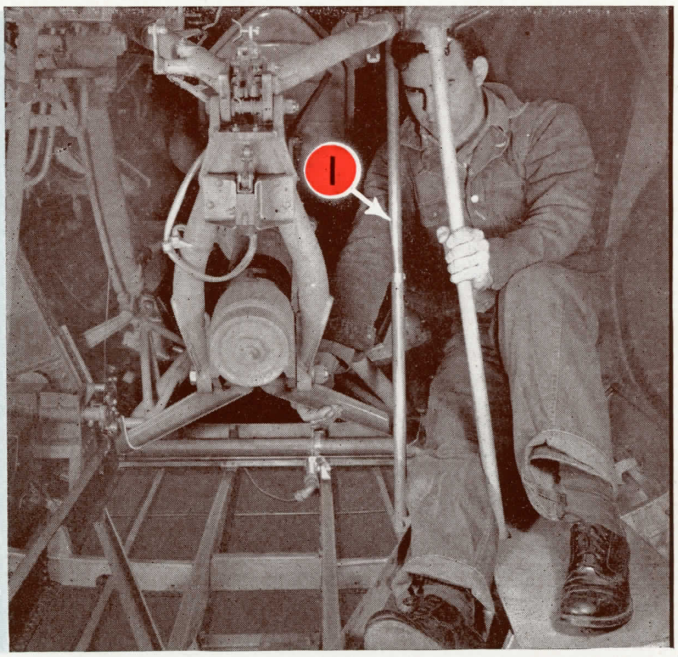
STOW NOSE LANDING GEAR SIDE CURTAIN

• Loosen curtain clasps (1) and roll curtain up into stowed position, fastening it with the strap (2), as illustrated.

LIFT THE NOSE GEAR MANUALLY FROM THE RETRACTED POSITION

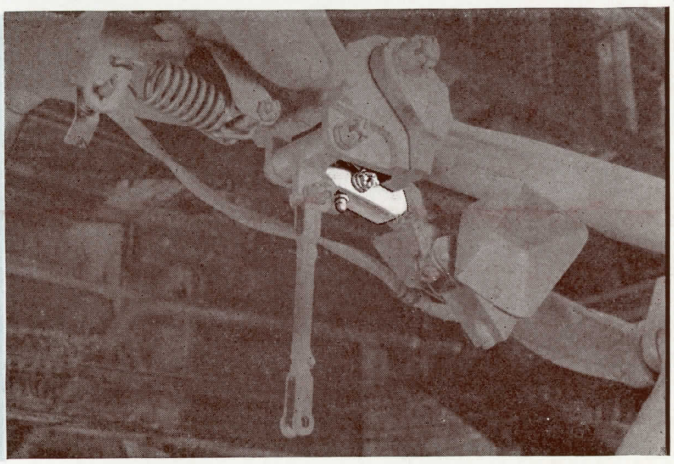
• When the gear passes top, dead center, it will drop freely into the down and locked position.

WARNING: To avoid serious injury be sure the arm is on forward side of vertical hand-rail (1), as illustrated.

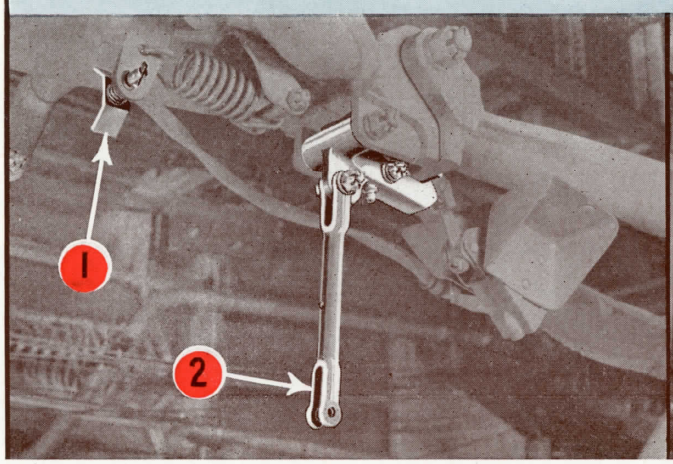


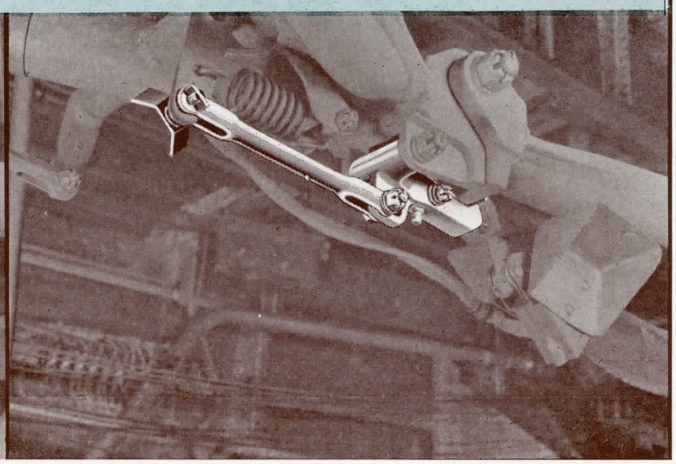
INSPECT ENGAGEMENT OF NOSE GEAR DOWN LATCH

NOTE: If the latch is not locked, push up on the drag link adjacent to the latch, until the latch engages. If necessary, wire latch to drag link.



NOSE LANDING GEAR is reset by replacing release pin (1) in latch linkage (2).





★ ★ ★

FLIGHT & SERVICE news-letter
RESTRICTED
CONSOLIDATED AIRCRAFT CORP. San Diego
1943
FIELD SERVICE BULLETIN
RESTRICTED
FLIGHT AND SERVICE DEPARTMENT
CONSOLIDATED AIRCRAFT CORP. San Diego
CONSOLIDATED VULTEE AIRCRAFT CORP. San Diego
CONSOLIDATED VULTEE AIRCRAFT CORPORATION
San Diego, California, U. S. A.
CONSOLIDATED
VULTEE